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ABSTRACT

This test of Marshall McLuhan's claim that increased exposure to television will develop a perception of the world as a "global village" used estimation of cognitive distance as an operational definition of the global village concept. The first phase of the study tested the hypothesis that "heavy" television viewers' estimates of cognitive distances between foreign cities would be smaller than estimates made by "light" television viewers. Based on their television diaries, 76 German high school students were classified as "heavy," "medium," or "light" viewers and asked to estimate the distance from their home town to three clusters of cities. Contrary to the global village hypothesis, heavy viewers produced the largest estimates of cognitive distance. In the second phase, students were grouped according to the amount of time they spent viewing news and political magazines and their viewing intensity. It was found that the level of intensity of viewing had a significant effect on the subjects' estimation of cognitive distance--i.e., high intensity viewers made lower estimates as they became more familiar with the foreign cities--while the amount of viewing time did not. To further test the "global village" hypothesis, in the final phase of the study a class of 16 students exchanged video letters about their school, home town, and daily activities with American students. When a questionnaire to determine level of prejudice toward Americans was administered to this and a control group, an increased positive attitude toward Americans was observed among the members of the video exchange group, but not the control group. (7 tables, 14 references) (GL)

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1. Television and the Global Village

Following Marshal McLuhan's (1962, 1965) central idea - "The medium is the message" - , it's television, which lets the world shrink to an electronic or global village (see Winterhoff-Spurk, 1986). Though "Canada's intellectual comet" (as Harper's Magazine called him, see Olson, 1981) wrote: "Europeans cannot master the(se) new power of technology because they take themselves too seriously and too sentimentally. Europeans cannot imagine Earth City. They have occupied old city spaces too long to be able to sense new spaces created by the new media" (McLuhan, 1960, p. 182). And though I live near Heidelberg - one of these old cities - I would like to introduce some empirical studies to you - without sentiment and not too seriously - about the relationship between tv-use and the individual's perception of foreign countries. The question is: Are there content-free general effects of more or less tv-use on the individual's perception of foreign countries - George Gerbner called this cultivation effects.

2. TV-Viewing and Cognitive Maps

The first question is: What does the "global village"-idea mean for cognitive psychology? I think, it is the question of cognitive maps of "large scale places" (Downs & Stea, 1982; Siegel, 1981). As we know from the literature, such cognitive maps are semantic long-term memory representations consisting (at least) of two groups of elements: Places and relations between places of different scales. As to the "global-village"-hypotheses, we concentrate on the latter aspect and look for tv-influences on cognitive distances between different places.

What makes us regard a place as a distant place are variables like the lack of attractiveness of the aiming point, a great number of difficult hindrances, the length of the objective distance, a deficit of familiarity etc. Television - one could speculate - influences at least some of these variables in a certain way. As Hugo Muensterberg wrote already 1916 about film (cited from the 2nd edition, 1970, p. 14) - "A set of pictures taken by the camera man a thousand miles away can be inserted in the film, and the audience sees now the mows of Alaska and now the tropics, near each other in the same reel" - some modern authors (Downs & Stea, 1982; Liben et al., 1981; Meyrowitz, 1985) expect the same effects from television: It provides visual access to different places in a very short time, so the viewer should get acquainted with foreign places very comfortable, that means without hindrances. This process should take place so much, the more the viewer looks tv. In the terminology of cognitive psychology: The heavy viewers' estimates of cognitive distances between foreign cities should be smaller than those of the light viewers.

Following this line of arguments, we made a first questionnaire study with 76 high-school pupils between 14 and 16 years old. (In a pre-study with 150 pupils we looked for the optimal method to measure the amount of tv- and video-viewing. We found out, that a so called "tv-diary" - consisting of all programmes of the week before - was almost as exact as the measurement by telemetric procedures. Additionally, we asked for the time that had been spent with looking video-films the week before.) With the help of the tv-diary, we grouped our subjects into three groups "heavy", "medium" and "light" viewing: The first group had an average viewing time of 3 hours and 2 minutes daily, the second group's average was 2 hours and 1 minute, the last group used tv 58 minutes the day.

The dependent variables were estimations of distance from the subject's home town (Ludwigshafen near Heidelberg) to three clusters of European cities: (a)

Cities situated within a range of 500 km (Hamburg, Berlin, Dresden, Prague, Milan, Paris), (b) cities within a range of 1000 km (Naples, Edinburgh, Belgrade, Warsaw, Barcelona, Königsberg) and (c) three very big cities (New York, Los Angeles, Moscow).

With these estimations we computed an analysis of covariance (independent variable: viewing time, concomitant variable: mark in geography; additionally, we selected those subjects which already had visited the respective city before). The results were - let's say - surprising: We found no significant differences as to the first and the second group of cities, the results concerning New York, L. A., and Moscow were significant altogether - but in the wrong direction. Contrary to the global-village-hypothesis, the heavy viewers produced the larger estimations.

Insert table 1 here

What makes the difference - we had to ask next - between the cities within the 500- and the 1000-km-range and the three others? Maybe - we guessed - it is the hindrance of the "iron curtain" or the Atlantic Ocean. Consequently, in another study with 125 subjects of the same school type and age, we only asked for cognitive distances to American cities. As to the independent variable "viewing time", we additionally constructed a 10-item rating-scale named "viewing-intensity" with items like "Do you do something else when looking tv?" etc. With regard to the dependent variables we now grouped the cities into the two clusters "real" and "fictional". "Real" places were Washington, New York, Los Angeles, Silicon Valley, and Cape Canaveral, because these places mostly appear in tv-messages about "real" people, objects, and events. "Fictional" places are Denver, Dallas, Hollywood, Dodge City, and Laramie, which - though they really exist - usually appear in Germany in a "fictional" (soap-opera-, western- etc.) context (see Winterhoff-Spurk, 1989).

Again, the results were disappointing for McLuhan: The independent variable "viewing time" makes almost no significant differences, and if we would be satisfied with tendencies, again the estimations of the heavy viewers were larger than those of the light viewers. Stronger effects we discovered as a function of the other independent variable "viewing intensity": For all 11 cities the subjects with low viewing intensity (grouped by median split) produced larger estimations than the subjects with high viewing intensity. Significant differences we found for the "real" cities Washinton, Cape Canaveral, and Silicon Valley as well as for the "fictional" cities Dallas, Denver, and Laramie. (A noteworthy incident was the great number of missing values considering this study. As we know from written and oral comments, these subjects didn't knew the asked distances and didn't dare to estimate them. But as there were no systematic differences concerning the number of missing values in our design, we temporary ignored this problem here.)

Insert table 2 here

To eliminate further error variance, we made two additional restrictions: Instead of the general viewing time we classified our subjects by the time they viewed news and political magazines into the two groups "no news"-viewing and "news"-viewing. Concerning the dependent variables, we used only the "real" cities because of the somehow hybrid character of cities like Dallas, Denver etc. The above named effects of viewing-time and -intensity should now be much clearer: News-viewing subjects with low viewing intensity should produce the largest estimations of all four groups.

Insert table 3 here

As one can see, we really got the largest estimations from this group and a minor tendency to small estimations in the group "news viewing/high intensity". We assume, that these differences are the result of different cognitive styles or different levels of processing: If the subjects look at the news with high viewing intensity, they find or elaborate relations between their old knowledge and the new information from the news. By the help of this deeper processing also the distant places of the world become more and more familiar - and familiarity was one condition of short cognitive distances. Viewers with low intensity don't establish such relations between old and new knowledge and thus, news about foreign places are something like a firework of strange, coloured pictures - stemming from the moon, from New York or from the bottom of the sea.

After all, we assume that the estimation of distances reflects something like the familiarity with the world outside or - to argue with McLuhan - a feeling of a global village. Contrary to McLuhan, this village seems not to be smaller but larger for some tv-using people than for others. We assumed post-facto, that the cognitive style, the level of processing, caused the observed differences. Maybe underhand we thus arrived at another interpretation of George Gerbner's "scary-world"-results.

3. Video-Exchange and Intercultural Prejudices

At this point I heard about a project, that a friend of mine - a teacher at a German high-school near Frankfurt - did with her pupils. She had found a colleague from another high-school at Philadelphia (USA), who was interested too in exchanging video-letters between the two classes. Thus, they agreed in producing video-films about their respective schools, home-towns, daily activities etc. For me, this project was an excellent opportunity to test the above named "level-of-processing"-hypothesis: If it is true, the relatively

intensive occupation with an otherwise distant place should reduce estimations of distance.

So we organized the following study: One class of 16 pupils joined the video-exchange-group (= video-group), another class of 16 pupils of the same age did not (= control group). To both groups we administered the same questionnaire once before (= fall 1987) and once after (= summer 1988) the project (= pretest/posttest design).

Insert table 4 here

The first computational procedure was to compare the video- and the control-group as to differences in age, family-status, sex, tv-viewing etc. We found no significant or systematic differences. The next step had to do with the estimation of distance, and this one brought trouble upon us: Unfortunately, we again found a lot of missing values (up to 10 subjects), but as the group consisted only of 16 subjects, we could not compute a useful statistical analysis here.

As mentioned above, this problem was not absolutely unexpected. Possibly, the estimation of distance - though common and convenient - is neither the only nor the best operational definition of the "global village"-hypothesis. According to this, our questionnaire also included a scale about intercultural stereotypes (from Stapf, Stroebe & Jonas, 1986), and here we found interesting effects.

The first scale was a list of 25 traits like "intelligent", "cultivated", "religious", "hostile" etc. and the subjects had to estimate, how many (in %) people of the US-population own this trait. Comparing the video-group with the control-group at the first measurement, the video-group was a little bit more critical: They view the Americans less likeable ($p < 0,05$), less family

oriented ($p < 0,05$) and more conforming ($p < 0,01$) than the control-group. This critical attitude changed dramatically from the first to the second measurement: Here we found ten significant improvements and - condensed - a strong tendency to a less critical view at all.

Insert table 5 here

Within the control-group we found only three significant differences: This group rated the US-people more arrogant, egoistical, and industrious than before. After the second measurement, the video-group now has a more favorite attitude than the other group.

Insert table 6 here

Beside this scale, we also administered a 20-item-scale on "tv-credibility" with questions like "TV allows an independent opinion." or "TV manipulates informations." (see Nestamnn, 1980). Absolute tv-critics could reach 20 points from this scale, tv-believers could reach a value of 100 points. On this scale, too, we found systematic effects: It seems as if the practical and subjective experiences in producing a tv-message sharpens the pupils' cognitions for the possibilities of the medium to manipulate objective informations.

Insert table 7 here

4. Television and Foreign Countries

After all, what is the message of these studies? (1) Firstly, if we accept the estimation of cognitive distance as a possible operational definition of the "global-village"-idea, we found no evidence for a global global-village-effect. Contrary to McLuhan's optimistic hope of shrinking distances we found hints,

that specific groups (e.g. pupils of elementary schools, viewers with low viewing intensity) regard the world more as a large town with enlarged cognitive distances. (2) Secondly, if the global-village-idea could also mean an increased positive attitude against the neighbour of this village, we also found hints, that (better than the passive looking at the tv-window to the world) its active use for communicative purposes (like a video-exchange) modifies prejudices in the desired direction. (3) As a side effect, the active work with the medium tv also sharpens the user's critical cognitions for the manipulative potency of tv and thus kills two birds with one stone.

To end with McLuhan: I hope I could demonstrate, that at least my subjects can imagine Earth City. But at the moment, I'm not quite shure, if the US-pupils can imagine, that Europeans can imagine Earth City. By chance I got the results of a home-made questionnaire of the US-group from the start of the video-exchange: More than 50 % of the 32 subjects rated their German partners as "disciplined", "warlike", "arrogant", "patriotic" and "easily ruled" and more than 60 % answered, that they had gained this image from a certain medium: Television!

Thank you for listening.

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Table 1: Estimations of distances and viewing-time

<u>CITY</u>	<u>VIEWING-TIME</u>			Significance
	Light	Medium	Heavy	
New York	4.579 km	3.986 km	<u>7.645 km</u>	$p < 0,02$
Los Angeles	6.581 km	5.460 km	<u>11.553 km</u>	$p < 0,005$
Moscow	1.413 km	1.888 km	<u>2.897 km</u>	$p < 0,01$

Table 2: Estimations of distance and viewing-intensity

<u>CITY</u>	<u>VIEWING INTENSITY</u>		Significance
	Low	High	
Cape Canaveral	<u>8.900 km</u>	5.782 km	$p < 0,05$
Silicon Valley	<u>11.545 km</u>	8.745 km	$p < 0,03$
Washington, D. C.	6.828 km	5.410 km	n.s.
Los Angeles	11.260 km	9.286 km	n.s.
New York	7.568 km	5.906 km	n.s.
Dallas	<u>9.795 km</u>	6.621 km	$p < 0,05$
Denver	<u>9.685 km</u>	6.541 km	$p < 0,04$
Laramie	<u>10.621 km</u>	6.100 km	$p < 0,02$
Hollywood	9.880 km	8.138 km	n.s.
Dodge City	7.147 km	6.117 km	n.s.

Table 3: Estimations of distance, news-viewing and viewing-intensity

<u>CITY</u>	NO NEWS/ LOW INT.	NO NEWS/ HIGH INT.	NEWS/ LOW INT.	NEWS/ HIGH INT.	SIGN.
Los Angeles	9.047 km	9.276 km	18.643 km	9.068 km	0,04
Washington, D. C.	5.347 km	6.080 km	10.793 km	3.838 km	0,006
New York	6.357 km	7.057 km	11.761 km	3.168 km	0,02
Cape Canaveral	7.884 km	6.817 km	12.186 km	3.205 km	0,02
Silicon Valley	10.939 km	10.154 km	11.402 km	6.022 km	(0,16)

Table 4: Design of the video-exchange-study

FALL 1987

WINTER 1987/
SPRING 1988

SUMMER 1988

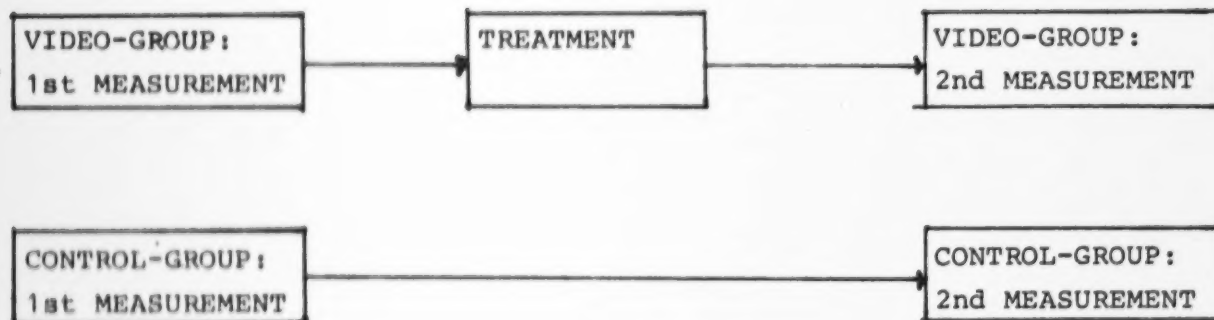


Table 5: Pre-/Post-measurement of the video-group

TRAIT	1st-MEASUREMENT	2nd MEASUREMENT	SIGNIFICANCE
INTELLIGENT	45 %	57 %	0,005
CULTIVATED	40 %	56 %	0,04
OUTGOING	65 %	81 %	0,001
HONEST	52 %	69 %	0,01
ENJOY LIFE	56 %	73 %	0,05
AMBITIOUS	57 %	73 %	0,003
FRIENDLY	69 %	81 %	0,04
INDUSTRIOUS	53 %	66 %	0,002
HOSTILE	24 %	36 %	0,009
OPEN-MINDED	47 %	61 %	0,01
FAMILY-ORIENTED	44 %	62 %	(0,07)
LIKEABLE	52 %	62 %	(0,09)

Table 6: Changement of attitudes (mean values)

	1st MEASUREMENT	2nd MEASUREMENT
a) POSITIVE TRAITS		
VIDEO-GROUP	51,7 %	62,4 %
CONTROL-GROUP	58,6 %	59,7 %
b) NEGATIVE TRAITS		
VIDEO-GROUP	54,5 %	54,1 %
CONTROL-GROUP	46,2 %	52,6 %

Table 7: Changement "TV credibility"-scale (20 to 100 points)

	1st MEASUREMENT	2nd MEASUREMENT	SIGN.
VIDEO-GROUP	62	56	0,005
CONTROL-GROUP	66	64	n.s.